## (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 21 October 2004 (21.10.2004)

PCT

## (10) International Publication Number WO 2004/090937 A3

(51) International Patent Classification<sup>7</sup>:

B24B 1/00

(21) International Application Number:

PCT/IL2004/000310

(22) International Filing Date:

4 April 2004 (04.04.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/461,437

10 April 2003 (10.04.2003)

(71) Applicant (for all designated States except US): TECH-NION RESEARCH & DEVELOPMENT FOUNDA-TION LTD [IL/IL]; Senate House, Technion City, 32000 Haifa (IL).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): EIN-ELI, Yair [IL/IL]; 9 Amnon VeTamar Street, 34791 Haifa (IL). STAROSVETSKY, David [IL/IL]; 16 Jordan Street, 20692 Yokneam Ilit (IL). ABELEV, Esta [IL/IL]; 25/35 Pinchas Sapir Street, 29000 Kiryat Yam (IL). RABKIN, Eugene [IL/IL]; 1 Kadish Luz Street, 32159 Haifa (IL).
- (74) Agent: G.E. EHRLICH (1995) LTD.; 11 Menachem Begin Street, 52521 Ramat Gan (IL).

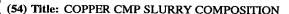
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD. MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM. TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 23 December 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



(57) Abstract: A composition that rapidly passivates copper-containing surface to yield a uniform layer of insoluble copper oxide, the composition being useful in chemical-mechanical planarization of copper-containing surfaces is disclosed. The composition is a solution having a pH of equal to or greater than 9 and having an oxidation potential sufficient to oxidize the surface to form non-soluble copper oxides. Also disclosed are methods of making and using the composition.





## INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL04/00310

			FC1/1104/00310		
A. CLASSIFICATION OF SUBJECT MATTER IPC(7): B24B 1/00 US CL: 451/35,41, 438/692, 106/3 According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS SEARCHED					
Minimum documentation searched (classification system followed by classification symbols) U.S.: 451/35,41, 438/692, 106/3					
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched					
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Composition, oxidation potential, copper, copper oxide, pH					
C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where	appropriate, of the relev	ant passages	Relevant to claim No.	
Х	US 6,447,371 B2 (BRUSIC KAUFMAN et al) 10 September 2002 (10.09.2002), See the entire document.			1,26-31,37,41-47	
Α	US 5,800,577 A (KIDO) 01 September 1998 (01.09.1998)			1-52	
Α	US 5,840,629 A (CARPIO) 24 November 1998 (24.11.1998)			1-52	
Α	US 6,313,039 B1 (SMALL et al) 06 November 2001 (06.11.2001)			1-52	
				·	
Eusther	donumento per lista di sala su di sala su di				
Further documents are listed in the continuation of Box C.			amily annex.		
Special categories of cited documents:  "A" document defining the general state of the art which is not considered to be of particular relevance		date and not in	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention		
"E" earlier application or patent published on or after the international filing date		"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step			
"L" document establish the specified)	establish the publication date of another citation or other special reason (as		when the document is taken alone  document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is		
	referring to an oral disclosure, use, exhibition or other means	combined with one or more other such being obvious to a person skilled in the		documents, such combination	
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family			
	tual completion of the international search	Date of mailing of the international search report			
O1 October 2004 (01.10.2004)  Name and mailing address of the ISA/US  Authorized officer					
Mail Stop PCT, Attn: ISA/US  Mail Stop PCT, Attn: ISA/US  Commissioner for Patents P.O. Box 1450  Alexandria, Virginia 22313-1450		Authorized officer  Dung Van Nguyen  Telephone No. 703-30	05-0036 Paraleg	H. Vener ency al Specialist	
	(703) 305-3230		Tech.	Center 3700	

Form PCT/ISA/210 (second sheet) (January 2004)